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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/534,589

03/22/2006

Choon-Keun Hong

11281-068-999

4444

20583

7590

11/02/2009

JONES DAY
222 EAST 41ST ST
NEW YORK, NY 10017

EXAMINER

HOFFMANN, JOHN M

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

11/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/534,589 | Applicant(s) HONG ET AL. | |
| | Examiner John Hoffmann | Art Unit 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is confusing antecedent basis for “the collapsing process” (claim 1, line 12)- it is unclear whether it is the collapsing process of line 5 or that of line 8. Compare also to claim 5 which suggest an additional 2-4 mm limitation.

Claim 11: there is confusing antecedent basis for “the collapsing process”.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Examiner could find no support for the newly claimed that the inner is “within the range of 2 to 4 mm after the collapsing process” of claim 1, lines 11-12 – especially in combination with the claim 5 limitation that indicates the diameter is 2-4 mm as a result of the “etching and collapsing process”.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1- 3, 5, 6, 8, 11, 13 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Pluijms 4793843 in view of French 4154591.

The depositing step is disclosed substantially at col. 1, lines 45-47. Although both types of layer are not explicitly disclosed, one would immediately infer such from the term MCVD. For example see applicant's specification "Background Art" section which describes conventional MCVD as such.

From MPEP 2144.01 Implicit Disclosure:

"[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

See also, *In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir 1985).

The collapsing process is disclosed at col.3, lines 6-10 of Pluijms. It is inherent that such requires heating since glass requires elevated temperature to cause deformation. See also col. 4, line 31.

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As to the etching/collapsing process, see fore example col. 4, lines 34-36.

However the 2-4 mm limitation is not disclosed, rather Pluijms teaches the inner diameter be at most 1 mm.

As to the closing process: it is deemed that Plumijms has a closing process that begins when the tube first has an inner diameter that is 0, or alternative, when the tube first has a diameter one half of the starting diameter (col. 3, line 8).

As shown in figure 1 of French, where there is a collapsed portion, the remaining tube is tapered. It is clear that Pluijms would have connecting features to either end of the tube so as to permit the control of the gas that flows through the tube. That is the tube ends that are gripped by the lathe chucks would not be collapsed, and that diameter would taper. And inherently, at some location, the diameter of the taper is within the 2-4 mm range. The claim only requires a single diameter within the range, not all diameters.

It would have been obvious to not collapse the end portions of the tube in the Plumijms collapse (as show in French, Figure 1) so that the chucks or other connecting devices can effectively maintain a grip and not leak any of the gases that flow through the tube.

Claim 2: see col. 4, lines 4-5: such is a ratio 4.8:1 which is deemed to be within a range of 2.5:1 to 30:1.

Claim 3 is met because 48 sccm is 50 sccm written to 1 significant digit.

Claim 5: It is deemed that the tube tapers would inherently have at least one diameter of 2-4 mm.

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Claims 6 and 13: it is clear the processes occurs along all portions.

Claims 8, 11 and 14 are clearly met.

Claims 4, 7, 9, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pluijms 4793843 and French 4154591, as applied to claim 1 above, and further in view of Keim 5160520.

Claims 4, 7, 9, 10 and 12 all limit various process parameters. It is clear from Keim and French that the variables are known result effective variables. It would have been obvious to perform routine experimentation to determine the optimal processing parameters so as to make better preforms faster - depending upon the size of the preform. For example, claim 12 – the optimum flow rate would depend upon the size of the inner diameter. Clearly a 30 cm inner diameter tube would have different flow rate compared to a 1 cm inner diameter tube.

Claims 1- 3, 5, 6, 8, 11, 13 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider 4557561 in view of Wisk 6220060.

Schneider discloses the invention as shown in applicant's Figure 1b substantially at col.9, lines 13-18. That is, it is preferable to etch the tube during only one phase/pass of the collapsing, followed by a closing step (e.g. col. 8 lines 58-59.) *Except for the limitation of 2-4 mm* all of the other claim 1 limitations are clearly met in the Schneider - as one could argue is presently admitted by applicant in the Background Art section of the present application.

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Wisk discovered that bubbles are likely to occur if the tube has a diameter of less than 1.5-2.5 mm (col. 3, lines 61-63). This is the diameter for the final pass or else a bubble can form (col. 3, lines 1-6). This destroys 5-10% of the preforms (col. 1, lines 29-33).

Wisk at col. 3, line 64 to col. 4, line 8 discloses four solutions to the bubble problems, but that teach carries significant disadvantages – including the problem with too big of an inner diameter.

Thus given that the inner diameter is a result effective variable, it would have been obvious to perform routine experimentation to determine the optimal diameter, with no new or unexpected results.

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2144.05 [R-1] Obviousness of Ranges

See MPEP § 2131.03 for case law pertaining to rejections based on the anticipation of ranges under 35 U.S.C. 102 and 35 U.S.C. 102/103.

II. OPTIMIZATION OF RANGES

A. Optimization Within Prior Art Conditions or Through Routine Experimentation

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); >see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.");< ** In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

B. Only Result-Effective Variables Can Be Optimized

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result-effective variable.). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

Claim 2: Schinders values of 15 NmL/min and 300 (col. 9, lines 6 and 13 yields a ratio of 20:1.

Claim 3: It would have been obvious to perform routine experimentation to determine the workable range, depending upon the size of the hole one has.

Claim 5 is interpreted as repeating a limitation of claim 1.

Claims 6 and 13: it is clear the processes occurs along all portions.

Claims 8, 11 and 14 are clearly met.

Claims 4, 7, 9, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider and Wisk, as applied to claim 1 above, and further in view of Keim 5160520 and French 4154591.

Claims 4, 7, 9, 10 and 12 all limit various process parameters. It is clear from Keim and French that the variables are known result effective variables. It would have been obvious to perform routine experimentation to determine the optimal processing parameters so as to make better preforms faster - depending upon the size of the preform. For example, claim 12 – the optimum flow rate would depend upon the size of the inner diameter. Clearly a 30 cm inner diameter tube would have different flow rate compared to a 1 cm inner diameter tube.

Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

It is argued that Pluijms does not disclose an etching process and collapsing process, followed by a closing process. Examiner disagrees. It appears applicant is interpreting the claims more narrowly than the broadest reasonable interpretation. That is the claims are comprising in nature, and thus a closing processes can have anything else going on, including etching. And, as pointed out previously, the present specification gives no guidance or definition or suggestion that any of the claimed

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processes have any sort of starting and/or ending boundary. For example one can consider the last 1/3rd of the final pass to be the closing process, and the first 3rd of the first collapsing step to be the collapsing step (claim 1, line 5) and everything in between the "etching and collapsing process". In other words, the term "process" can encompass as little as a third of a pass (or an even shorter time period).

It is further argued that since claim 1 recites that the closing process occurs "after the etching and collapsing process" it is clear that the closing process does not include etching. Examiner fails to anything which indicates the closing process excludes etching. The claim is comprising in nature and thus is open to anything, including etching during the closing. Furthermore, if one were to apply the same rationale, then the closing step would not include collapsing. But it is abundantly clear that it cannot close without collapsing.

As to the argument that French teaches away: French does not teach away from Applicant's claimed invention, or from the prior art combination because the disclosure of this reference does not criticize, discredit, or otherwise discourage the invention or the combination. *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1145-46 (Fed. Cir. 2004).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Keim teaches that the pressure is a result effective variable (equation of col. 1)

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even if French does not. As to the rotational velocity, French teaches at col. 3, lines 22-24, that the speed is to be adjusted according to the dictates of the practitioner.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Glodis, Mazzaresse, and Shimada are cited as being of general interest.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Hoffmann
Primary Examiner
Art Unit 1791

/John Hoffmann/
Primary Examiner, Art Unit 1791